

Nutrition Targets and Indicators for the

Post-2015 Sustainable Development Goals

Accountability for the Measurement of Results in Nutrition

A Technical Note

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I) INTRODUCTION

1.1 Nutrition is integral to sustainable development

Nutrition is to be understood as both an input to and an outcome of sustainable development. Malnutrition -which includes several forms of undernutrition as well as overweight and obesityderives not just from a lack of food, but from a host of interacting processes linking health, care, education, sanitation and hygiene, access to resources, women's empowerment and more. The choices that individuals make regarding what foods to produce and market, what diets their families consume, and the care and nurture of nutritionally vulnerable people (particularly mothers and infants), all have a direct bearing on nutrition outcomes.

At the individual level good nutrition is necessary for achieving optimal physical and mental development during childhood, and has been linked to improved academic performance and higher wage rates during adolescence and adulthood. At population level, these benefits support increased economic growth and welfare gains, two sustainable development requisites.

Conversely, poor nutrition impairs labour productivity, which in turn impedes national economic growth. Without appropriate investments and action, poor nutrition contributes to the global burden of disease, impairs quality of life, and acts as a brake on economic growth worldwide. In this sense, malnutrition poses a pernicious, often invisible, impediment to achieving all the Post-2015 Sustainable Development Goal (SDG) targets.

As such, the nutrition community, and its natural allies in the food systems, agriculture, WASH, gender, social protection and health communities, are advocating for action oriented, measurable targets for improved nutrition within the SDG framework [1].

This technical note encourages dialogue on targets and related indicators to monitor, report on and account for progress towards improved nutrition across the post-2015 agenda. The note is organized as follows: The rest of this introduction provides background on the Millennium Development Goals, changes in the nutrition landscape over the last decade, and the suggested SDGs. The following section covers proposed global nutrition targets and indicators; embedding nutrition indicators in the SDGs; and intervention coverage indicators for country-level monitoring. The final section addresses the issue of accountability, first with regards to ensuring that data collection and national information systems can accurately measure progress in nutrition by providing high quality, timely and disaggregated data; and second with a discussion of national cost estimates and tracking of resources for nutrition.

1.2 The MDG agenda is incomplete

In the year 2000, world leaders adopted the Millennium Declaration and agreed on a set of eight Millennium Development Goals" (MDGs) to be met by September 2015. MDG1 brought attention to the need to improve food and nutrition security (Goal 1C: *to halve the proportion of people who suffer from hunger*) [2], with its two indicators for monitoring progress: indicator 1.8 Prevalence of underweight children under-five years of age; and indicator 1.9 Proportion of population below minimum level of dietary energy consumption. A more colloquial and commonly used term for this latter indicator is "undernourishment" (SOFI 2013).

Overall, however, the MDG nutrition focus was minimal. Moreover, without having specified *how* to achieve the nutrition - and other - targets, country ownership of the goals was hamstrung. To date, while unprecedented progress has been made in poverty eradication and human development, many of the targets, including MDG-1C, are far from being achieved.

Lessons learnt from the MDG framework specific to nutrition include the realization that the focus on undernutrition was too narrow, and that synergies between nutrition and other sectors were underexploited. For example, many national nutrition strategies in the 2000s focused almost exclusively on treatment of acute malnutrition (wasting). Anchored in ministries of health, these strategies often did little to encourage food based approaches to reducing malnutrition. In many countries, the disconnect was further exacerbated by food security policies whose primary objective was increased production of staple grain [3]. Today, in contrast, a huge body of knowledge exists on "the multi-sectoral approach", including holding the food and agriculture sectors accountable for nutrition [4].

It is important to note that the "uni-sectoral" approach which fragmented nutrition strategy in the 2000s not only limited progress toward the achievement of MDG1 targets, but probably also slowed progress in achieving other related targets such as poverty reduction, education, child mortality and maternal health [5].

1.3 The nutrition landscape has changed

Since 2000, the nutrition situation has become more complex, with many countries experiencing multiple burdens of undernutrition, overweight and micronutrient malnutrition. In some contexts, all three conditions may occur simultaneously at household and even individual level [6].

This current scenario is attributed to dietary changes associated with rapid urbanization, more sedentary lifestyles, and increased consumption of processed foods, often referred to as "foods of minimal nutrition value". These three global trends have contributed to rising trends in overweight, obesity and diet-related noncommunicable diseases worldwide.

At the same time, climate change and associated natural severe weather events are resulting in frequent food crises, with subsequent increased incidence of food insecurity and food price instability. These are sometimes exacerbated by trade globalization and increased competition for ecosystem services. Socio-economic inequities in malnutrition persist, and nutrition improvements have not always been equitable [3].

Since 2010, the global Scaling Up Nutrition (SUN) Movement has been instrumental in stimulating and sustaining political commitment to addressing this state of affairs [7]. SUN is country-led, to date, there are 54 countries participating, and is unique in bringing different groups of people together – governments, civil society, the United Nations, donors, businesses and scientists – in a collective effort to improve nutrition.

The Second International Conference on Nutrition (ICN2) convened in November 2014 reaffirmed countries' commitment to reducing malnutrition. The ICN2 framed the post-2015 development agenda as an unprecedented opportunity to steer action and increase accountability in addressing both the direct and underlying causes of malnutrition [8].

Finally, empirical evidence on "what works" to improve nutrition has increased significantly. The 2008 Lancet Series on maternal and child undernutrition created consensus on a suite of effective "direct" nutrition-specific actions to address the most immediate, proximal causes of malnutrition [9]. Program- and policy wise, the concept of direct nutrition actions has contributed to an increased emphasis on "the first 1000 days" of life (from conception to 24 months) as a critical window of opportunity to sustainably establish good nutrition and growth. Evidence on this subject has also strengthened the economic case for nutrition - the returns on investment on these types of interventions are very high - and provided a platform for SUN and related initiatives to advocate for nutrition as integral to sustainable development [10].

A second Lancet series, published in 2013, provides additional evidence reinforcing the importance of scaling up direct nutrition actions and also provides new information on "nutrition-sensitive" interventions [11]. Nutrition-sensitive interventions span a variety of sectors and address underlying as well as basic determinants of nutritional status. They are an essential component of the multisectoral approach described above, involving agriculture, food systems, social protection, education, water and sanitation, and a number of other sectors in addition to health. In line with the growing evidence base and heightened advocacy for nutrition sensitivity across a range of sectors (e.g. reinforced through the ICN2 and the SUN movement), more and more national nutrition plans are taking a multi-sectoral approach [12].

1.4 Nutrition and the Sustainable Development Goals

The UN Open Working Group (OWG) recommended 17 SDGs and 169 targets to be achieved by 2030, which were acknowledged and welcomed by the UN General Assembly in September 2014 [13,14]. SDG 2 - '*End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*'- contains one provision on nutrition in the context of food security and sustainable agriculture. This is an achievement. However, the risk of this phrasing is that the concept of "improved nutrition" becomes reduced to hunger reduction and food security with a focus on the access to enough food.

A more correct, holistic vision of nutrition requires the recognition that access to enough food is insufficient, and that rather, good nutrition is a product of accessing the right *nutrients* at the right time. It also requires the recognition that health care and social protection may play a crucial role, especially for mothers during pregnancy and lactation, and for young children during the first two years of life.

Among the 169 proposed targets, one target is directly related to malnutrition. The target 2.2: "by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons".

The first part of target 2.2 makes explicit reference to two of the World Health Assembly (WHA) adopted targets (on stunting and wasting in children less than five years of age) for the improvement of maternal, infant and young child nutrition (WHA, A65/11, 2012). Conversely, the second part is expressed as a political statement with space to add more specific defined nutrition targets left open.

With SDG 2 as starting points, this paper addresses the following critical issues:

- At a minimum, embed all six WHA targets addressing all forms of malnutrition within the SDG framework.
- It is incomplete and insufficient to consider food access solely in terms of total dietary energy supply. Diet quality merits particular attention, especially in light of the multiple burdens of malnutrition and their interconnectedness with today's food systems.
- Tracking of overall government spending on nutrition is essential for results in nutrition.
- Overweight and obesity in adults related to the rising trends in non-communicable diseases should be addressed by the future SDG agenda.
- To underscore the importance of complementary national indicators, and as none of the current 169 targets addresses the 'how' of improving nutrition, countries (beyond the 54 SUN countries where such processes are already underway) should include targets for coverage of key nutrition actions in their SDG frameworks.
- Shortcomings in the nutrition data collection "toolkit" and recommendations for improving data quality and standardization at scale.

II) TARGETS AND INDICATORS FOR NUTRITION IN THE SDGs

2.1 Priority nutrition targets and indicators

The six global nutrition targets adopted at the WHA 2012

Selection criteria for global nutrition targets and related indicators [15-17] include scientific robustness, a strong track record of extensive measurement experience, and use by countries in monitoring of national plans and programs. The six global targets for maternal and child nutrition endorsed by the 65th World Health Assembly (WHA) fulfil these criteria [18-20]. All six are based on credible evidence of human benefit and it is strongly recommended that the entire suite be included as targets with relevant indicators as part of the SDGs. The WHA targets are as follows:

- 1. Reduce the number of children under-five who are stunted by 40%;
- 2. Reduce and maintain childhood wasting to less than 5%;
- 3. No increase in childhood overweight (children under 5 years of age);
- 4. Reduce anaemia in women of reproductive age (pregnant and non-pregnant) by 50%;
- 5. Increase the rate of exclusive breastfeeding in the first six months to at least 50%;
- 6. Reduce low birth weight by 30%.

The SDGs will likely be set until 2030, whereas the WHA targets are to be achieved by 2025. Corresponding SDG targets may be set for the 6 WHA targets for the year 2030 at more ambitious levels, since documented experiences in several countries suggest that with political will, the right mix of policies and adequate resources, it is feasible to make dramatic improvements in maternal and child nutrition [6]. WHO is currently working on these 2030 targets for the 6 WHA indicators. Further details on the rationale for each WHA target are provided in Annex 1.

In addition, indicators that go beyond the WHA targets need to be carefully considered in the post 2015 framework. Priority indicators include those related to diet quality and diversity, as well as indicators which aim to assess political commitment that is essential to scaling up direct nutrition actions and to investment in nutrition sensitive programming. Proposals to date include metrics which capture overall national government spending on nutrition.

Measure of dietary quality

As Jeffrey Sachs puts it in his address at the ICN2 Roundtable on Nutrition in the post-2015 development agenda [21], the SDG 2 is a challenging goal because it looks at agriculture, nutrition, and food security in an integrated manner. Consequently, its assessment requires addressing the links between adequate nutrition, real food needs, food production and sustainable agriculture. Measures of dietary quality are a step into the right direction as they push past the "quantity" concept of total dietary energy supply to focus on the quality of foods which are produced and available in a given food environment.

The rationale for the inclusion of the metrics on dietary diversity is found in SDG 2 itself: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. As previously discussed, this SDG requires connecting food systems, including agricultural production, with diversified and healthy diets in a coherent way. As an indicator of dietary quality and micronutrient access, individual diet diversity scores can help do just this. In contrast, conducting "business as usual" and including only the MDG indicator on undernourishment (percentage of population below minimum level of dietary energy consumption) is insufficient, as undernourishment

at best provides only a population level estimate of total energy supply, i.e. "quantity", with no information provided on "quality".

Measures of dietary quality are also critical to the six WHA targets. Beyond food quantities, the importance of nutritional quality and diversity of foods consumed is increasingly recognized as essential for a healthy diet, as malnutrition has persisted in many populations despite sufficient food availability and access.

Dietary diversity is a robust predictor of diet quality and micronutrient adequacy in both women and young children [22-24]. Recent studies suggest that the importance of dietary diversity as a determinant of stunting has increased [25]. Existing measures capture diet quality for women and children 6-23 months. Of note, especially with regard to the WHA targets, no dietary diversity metric exists for children >24m which leaves out a considerable time window when a reduction in wasting in children up to 59 months of age is envisaged. This is one of the gaps that deserve further attention. WHA targets are for children up to 5 years.

The proposed priority indicator of adequate diet diversity for the SDG framework is the following one:

Minimum Dietary Diversity for women (MDD-W): defined • as the proportion of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups [26]. This is a valid indicator of women's diet quality with specific focus on micronutrient adequacy. Maternal micronutrient deficiencies during lactation can directly impact child growth and development, but the potential consequences of maternal micronutrient deficiencies are especially severe during pregnancy, when there is the greatest opportunity for nutrient deficiencies to cause long term, irreversible development consequences to the fetus.

This indicators is currently endorsed by the international community for monitoring of progress in global frameworks [26]. As such, it is proposed to include MDD-W as an indicator for diet quality in the SDG framework. In addition to providing an essential measure of diet quality among one of the most important demographics for nutrition - women - inclusion of the MDD-W in the SDGs will also facilitate cross-country validation. While validated as an indicator of individual-level diet quality and of micronutrient quality, this indicator has not yet been

Priority list of recommended nutrition targets and indicators

1. Prevalence of stunting (low height-for-age) in children under 5 years of age

2. Prevalence of wasting (low weight-for-height) in children under 5 years of age

3. Percentage of infants less than 6 months of age who are exclusively breast fed

4. Percentage of women of reproductive age (15-49 years of age) with anaemia

5. Prevalence of overweight (high weight-for-height) in children under 5 years of age

6. Percentage of infants born with low birth weight (< 2,500 grams)

7. Adequate Dietary Diversity

The percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups

8. Means of Implementation

Percentage of national budget allocated to nutrition

tested for cross-country comparability [6], or for adolescent girls.

Measure of political commitment

The evidence-based solutions to end malnutrition are known. Therefore an indicator is recommended to measure the means of implementation made available for nutrition-specific and nutrition-sensitive actions according to national plans. This reinforces that nutrition is foundational for sustainable development. As the Global Nutrition Report 2014 states, an indicator is the cornerstone of accountability. To ensure accountability, it is vital that expenditures on nutrition be disaggregated and separately tracked. Similarly, it is critical that Official Development Assistance (ODA) measures disaggregate funding for nutrition, given the multi-sectoral nature of nutrition [27]. Countries participating in the SUN Movement are working on a tracking system of government spending in nutrition, and an important milestone was the Nairobi Workshop on Costing and Financial Tracking in November 2013. The proposed indicator for the SDG Framework is:

• *National budget allocation to nutrition:* defined as percentage of overall national budget allocated to nutrition. This indicator measures the overall national government's spending on direct nutrition actions as well as on nutrition-sensitive actions in related sectors.

Embedding priority nutrition indicators in the SDGs

SDG 2, target 2.2 - by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons - is the most obvious "home" for indicators addressing nutrition.

In order to include the priority nutrition indicators discussed above, it is recommended that target 2.2 be expanded 1) to include the full set of all 6 global targets adopted by the WHA 2012, treating this comprehensive set as one indicator of maternal and child nutrition, and 2) to include a measure of means of implementation especially the percentage of national budget allocated to nutrition.

It is furthermore proposed to expand SDG2, target 2.1 - by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round - to ensure that diet diversity of women be recognized as an important metric.

In addition to SDG2, the beforehand outlined priority nutrition targets and indicators also have a place in other SDGs. Particular focus should be put on SDG3.

SDG 3 on 'ensuring healthy lives and promote well-being for all at all ages':

Within target 3.1 defined as 'by 2030 reduce the global maternal mortality ratio to less than 70 per 100,000 live births, the following WHA nutrition targets could be embedded:

• Percentage of women of reproductive age (15-49) with anaemia

Within target 3.2 defined as 'by 2030 end preventable deaths of newborns and children under 5 years of age', the following WHA nutrition targets could be embedded:

- \circ Percentage of children less than six months old who are fed exclusively breast milk
- Percentage of infants born low birth weight (less than 2,500 grams)

Within target 3.4 defined as 'by 2030 reduce by one third premature mortality from noncommunicable diseases through prevention and treatment', the relevant nutrition targets would be:

• Prevalence of overweight (high weight-for-height) in children under 5 years of age

There is broad consensus around the priority indicators as summarized below that efficiently and comprehensively measure progress in the most critical areas of action to improve nutrition and other development outcomes.

Area	Priority Indicator	SDGs and Targets
Global Nutrition Targets endorsed by Member States at the 65 th World Health Assembly (WHA 2012)	Prevalence of stunting (low height-for-age) in children under 5 years of age	Goal 2, Target 2.2
	Prevalence of wasting (low weight-for-height) in children under 5 years of age	Goal 2, Target 2.2
	Percentage of infants less than 6 months of age who are exclusively breast fed	Goal 2, Target 2.2 and Target 2.1 and Goal 3, Target 3.2
	Percentage of women of reproductive age (15-49 years of age) with anaemia	Goal 2, Target 2.2 and Goal 3, Target 3.1
	Prevalence of overweight (high weight-for-height) in children under 5 years of age	Goal 2, Target 2.2 and Goal 3, Target 3.4
	Percentage of infants born with low birth weight (< 2,500 grams)	Goal 2, Target 2.2 and Goal 3, Target 3.2
Dietary Diversity	The percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups	Goal 2, Target 2.1
Policy	Percentage of national budget allocated to nutrition	Goal 2, Target 2.2a

2.2 Other optional indicators of significant importance

Besides the eight priority indicators, other optional indicators relate to nutrition outcomes among what are often neglected and vulnerable groups, namely: Obese adults, the elderly, displaced peoples, and adolescents (especially girls) and who are important to be considered.

As with other forms of malnutrition, the costs of obesity and overweight are high, not only in terms of disability and a diminished quality of life, but also in terms of lost productivity and burden on healthcare systems. Reversing rising trends in overweight and obesity and reducing the burden of dietrelated non-communicable diseases in all age groups is thus an imperative for sustainable development. As such, the following indicator is recommended for the global monitoring framework of the SDGs:

Overweight and obesity in adults (disaggregated by sex): Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥ 25 kg/m² for overweight and body mass index ≥ 30 kg/m² for obesity) [28]. This is one of the indicators in the Global action plan for the prevention and control of non-communicable diseases 2013-2020 [29]

The number of older persons – defined by 60 years of age or older – is growing globally and the worldwide trends are likely to continue to rise. By 2025, the worldwide number of elderly persons is expected to reach more than 1.2 billion, with nearly 840 million in low-income countries. Nutrition is an important determinant of health and mortality in older persons. They are at a higher risk of malnutrition due to physical causes, such as body changes, impaired vision, loss of taste as well as illness and disability, which can result in an increased risk of malnutrition. Therefore, it is important to monitor nutritional status of this vulnerable population to help reduce the incidence of malnutrition and improve health [30,31].

• *Nutritional status of older persons:* Ideally the proposed indicators should address older persons as formulated in the SDG2 target 2.2. However, there are no indicators, other than deficiency in Vitamin B12 and low nutritional status measured as low BMI, to assess nutrition of older persons that could be recommended as global targets. Given the growing significance of older persons in many parts of the world, there is an urgent need for adequate research to address this information gap.

Undernutrition and mortality in humanitarian situations is tragically high; global progress towards SDG health targets will be significantly constrained unless mortality and undernutrition in refugee and other emergency-affected populations is explicitly reduced. The September 2014 meeting of the SUN

Lead Group stressed the importance of strengthening capacities and resilience in countries dealing with recurring humanitarian crises. To date, however, there is no reference in the SDGs to populations in emergency situations. As such the gap in nutrition targets and indicators applicable to people in emergency situations should be addressed:

• Nutritional status of displaced peoples and those in humanitarian settings.

Optional measure on dietary diversity:

• *Minimum Dietary Diversity for children 6-23 months:* defined as the proportion of children 6-23 months of age who receive foods from four or more food groups, indicating adequate diversity in the composition of complementary foods for infants and young children during the second half of the 1000-day window of opportunity. During this period continued breastfeeding should be complemented with semi-solid and solid foods. Minimum dietary diversity predicts lower rates of stunting and wasting [6,25], and is a WHO-recommended progress indicator for child nutrition and growth [32].

Optional measure on policy:

• Number of health professionals who are trained in nutrition per 100,000 population: This indicator measures density of health professionals trained in nutrition in a given country, relative to the rest of the population. It reflects the capacity of a country to design and implement a nutrition policy and programmes effectively. This indicator is adapted from the WHO Nutrition Landscape Information System (NLIS) [33] and the WHO's World Health Statistics (WHS) database [34].

Other optional nutrition measures include:

- Overweight in school- age children and adolescents (disaggregated by sex): Percentage of overweight (< 1SD body mass index for age and sex) in school-age children and adolescents (5-18 years).
- *Underweight in women of reproductive age*: Percentage of women of reproductive age who are underweight (with low BMI of <18.5kg/m2).
- Underweight in school aged and adolescent girls
- Underweight in older people
- *Household Food Consumption Score (FCS)*: A measure of household food security used by WFP's food security Analyses, FCS is a composite index based on household level dietary diversity (number of food groups consumed by a household over a 7-day reference period), food frequency (number of times, usually in days, a particular food group is consumed), and the relative nutritional value of different food groups. Food consumption can be a function of food availability and/or food access; as a result, the FCS can potentially reflect two of the three dimensions of food security [35].
- The following complementary indicators that address the nutrition status of children in the first 1000 days, and adolescent girls are proposed. Access to safe and nutritious complementary foods for children 6-23 months, and Adolescent birth rate (per 1000).

New metric to be developed:

Another important future step would be to link nutrient-based food needs of people with the food production side. Production diversity indices could be another metric of potential for diet diversity. Besides, caution is needed since in view of the rapidly evolving complexity of food supply chains innovative ways are needed to also measure the contribution of more processed/packaged foods to diet diversity and quality. Other Metrics that are being developed address the link between nutrition and the sustainable management of natural resources [36].

Measures of an enabling environment for nutrition

Even if all twelve direct nutrition actions (see Section 1.3) were fully scaled-up worldwide, estimates indicate that the impact on stunting would be a 20% decrease [9]. Given that the ultimate goal is a 100% reduction, the role played by nutrition sensitive interventions, which address the underlying determinants of nutritional status, is a crucial one [6, 10]. Nutrition sensitive interventions span a variety of sectors. With regards to the SDGs, of particular importance are SDG1 on ending poverty, SDG4 on ensuring inclusive and equitable quality education, SDG5 on achieving gender equality and empowerment, SDG6 on ensuring sustainable water and sanitation, and SDG10 on reducing inequality.

For SDGs 1, 4, 5 and 6, there is potential for relevant nutrition-sensitive inventions in social protection, education, and water and sanitation. Relevant targets include:

- Target 1.3: 'implement nationally appropriate social protection measures and by 2030 achieve substantial coverage of the poor and vulnerable'
- Target 4.1: 'by 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- Target 6.1: 'by 2030 achieve universal and equitable access to safe and affordable drinking water for all'
- Target 6.2: 'by 2030 achieve access to adequate and equitable sanitation and hygiene for all and end open defecation'

With regards to creating an enabling environment for nutrition, the following progress indicators for these targets are proposed:

- Proportion of women (and adolescent girls, where appropriate) reached through social protection measures which include a nutrition component (i.e. explicit nutrition objectives and actions to be monitored [37,38]).
- Proportion of adolescent girls completing secondary level education. Education is critical to the empowerment of women. A robust evidence base indicates that girls' education is positively and significantly associated with improved nutrition of their children, as well as having indirect impacts such as delayed marriage and reduced fertility rates.
- Proportion of population using a safely managed drinking water service [39,40];
- Proportion of population using a safely managed sanitation service [39,40].

SDG5 on achieving gender equality and empowering women and girls may also benefit from including a nutrition-oriented target with respective indicators, namely:

- nutrition status of adolescent girls
- nutritional status of women of reproductive age

Prevalence of stunting and other forms of malnutrition often vary markedly between regions, ethnic groups, income and age quintiles, livelihood groups, and gender in ways which can be masked by national averages. As such, nutrition sensitivity can be embedded in SDG 10: *'reducing inequality within and among countries'*, and its target 10.3: to *'ensure equal opportunity and reduce inequalities in outcome'*, by disaggregating poverty data by gender, age group, geography and other variables which may unpack nutrition equity considerations.

Area	Additional Indicator	SDGs and Targets
Overweight and obesity in adults	Prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index \geq 25 kg/m ² for overweight and body mass index \geq 30 kg/m ² for obesity)	Goal 3, Target 3.4
Overweight in school- age children and adolescents	Percentage of overweight (< 1SD body mass index for age and sex) in school-age children and adolescents (5-18 years)	Goal 3, Target 3.4
Undernutrition in displaced population groups and those in humanitarian situations	Prevalence of undernutrition in women, adolescent girls, children under five years of age (according to the appropriate indicators)	Goal 2, Target 2.2 and Goal 3, Target 3.1 and Target 3.2
Dietary Diversity	Proportion of children 6-23 months of age who receive foods from four or more food groups	Goal 2, Target 2.1
Dietary Diversity	Household Food Consumption Score (FCS), a composite index based on household level dietary diversity (number of food groups consumed by a household over a 7-day reference period), food frequency (number of times, usually in days, a particular food group is consumed), and the relative nutritional value of different food groups	Goal 2, Target 2.1
Means of implementation	Number of health professionals who are trained in nutrition per 100,000 population	Goal 2, Target 2.2a and Goal 3, Target 3.c
Social protection	Proportion of women (and adolescent girls, where appropriate) reached through social protection measures which include a nutrition component (i.e. explicit nutrition objectives and actions to be monitored	Goal 1, Target 1.3
Education	Proportion of adolescent girls completing secondary level education.	Goal 4, Target 4.1
Gender Equality	Nutrition status of adolescent girls Nutritional status of women of reproductive age	Goal 5
Water and Sanitation	Proportion of population using a safely managed drinking water service	Goal 6, Target 6.1
Water and Sanitation	Proportion of population using a safely managed sanitation service	Goal 6, Target 6.2

The table below summarizes the additional optional nutrition indicators of significant importance that could also be included in the SDGs:

2.3 Intervention coverage indicators for country-level monitoring

In support of making national indicators of sustainable development complementary, and as none of the current SDG targets address the 'how' of facilitating improved nutrition outcomes, it is proposed that countries (beyond the 54 SUN countries where such processes are already underway) include targets on the coverage of key nutrition actions.

Coverage of nutrition interventions

To guide the action for progressing toward the global nutrition outcome targets cited above, policy makers and programme personnel also need process indicators tracking the coverage of nutrition-specific and nutrition-sensitive interventions. A key global commitment on scaling up coverage is the *Nutrition for Growth Compact*, where 94 signatories, from across national governments, UN agencies, civil society organizations, businesses and donors committed to, *by 2020, reach at least 500 million*

pregnant women and children under 2 with effective nutrition interventions; prevent at least 20 million children under five from being stunted and save at least 1.7 million lives by reducing stunting, by increasing breastfeeding and treating severe acute malnutrition [41].

However, coverage data for nutrition-specific interventions is sparse, often because the interventions themselves have yet to be scaled-up. Among the 12 key nutrition-specific interventions with proven effectiveness in improving maternal and/or child nutrition [11], most countries have national coverage data for only two interventions: vitamin A supplementation and universal salt iodization [6]. There are only limited data, of variable quality and usefulness, about burdens of acute malnutrition, moderate (MAM) and severe (SAM), and the coverage of their community based or clinical management. No standardized data exist on programme coverage for promotion of breastfeeding or improved complementary feeding. The same is true for coverage of programmes targeting adolescent girls with the objective of addressing micronutrient deficiencies and macro- nutrient needs, and/or to delay age of first pregnancy.

Given this scenario, and the fact that programmatic priorities and intervention packages vary by country, coverage of nutrition-specific interventions is not recommended as a global indicator. Nevertheless, tracking intervention coverage and scale up is essential for guiding national nutrition policies and plans of action, and therefore should be expanded, institutionalized and improved by all countries. [12].

Much work is already being done by SUN countries to foster accountability for delivery of essential nutrition actions[12], including proposals for the following:

- Creation of a Composite Coverage Index to monitor coverage of the suite of nutrition-specific interventions identified by the Lancet's 2008 series on Maternal and Child Nutrition. In line with the methodology described in Countdown 2015's most recent report, the Index would be a weighted score reflecting coverage of direct nutrition actions along the continuum of care. (For more details, see www. countdown2015mnch.org/reports-and-articles/equity.)
- Better measurement of nutrition-specific intervention coverage through improved household surveys and other methods.

With regards to tracking trends in coverage (and investment), more work is needed to define which interventions qualify as "nutrition-sensitive", and to develop global coverage information for them. The Global Database on the Implementation of Nutrition Action (GINA) is providing valuable information on the implementation of numerous nutrition policies and interventions in countries, many which are explicitly categorized as nutrition sensitive. Although GINA does not currently include coverage data [42] it is a strong candidate for serving as a future global coverage database.

2.4 Key Messages on targets and indicators

The post-2015 development agenda provides an invaluable opportunity to strengthen global and national nutrition metrics. Objectives include better information on all forms of malnutrition, better information on coverage, and better cost estimates/ tracking of investments in existing information and monitoring systems as well as with new, innovative approaches. In addition, the engagement of stakeholders across sectors is needed to refine the set of standardised evidence-based indicators that reflect the multisectoral nature of nutrition programming. The following key messages provide guidance for achieving these objectives.

Key nutrition targets should be an essential component of the SDGs Framework for Action.

Nutrition is a sustainable development requisite and improved nutrition outcomes are fundamental to most SDG targets. Malnutrition causes are now well-understood, and there is ample evidence of cost-effective solutions. Urgent action is essential and possible.

All six World Health Assembly targets should be included in the SDG framework. The post-2015

development agenda is set for 2015 to 2030, whereas the WHA targets are to be achieved by 2025. As such, more ambitious SDG targets can be set for 2030 to:

- Reduce the number of children under-five who are stunted
- Reduce and maintain childhood wasting
- No increase in childhood overweight (children under 5 years);
- Reduce anemia in women of reproductive age (pregnant and non-pregnant)
- Increase the rate of exclusive breastfeeding in the first six months
- Reduce low birth weight

Measures of dietary quality are critical to complement the six WHA targets. As malnutrition has persisted in many populations despite sufficient quantities of food available, the quality and diversity of foods consumed are increasingly recognized as critical for a healthy diet and positive nutrition outcomes. Indicators of individual-level diet diversity capture important information on diet quality and adequacy for women. Moreover recent studies emphasize the negative association between dietary diversity and stunting. The recommended priority indicator of adequate diet quality is:

• Minimum Dietary Diversity for women of reproductive age (MDD-W)

Political commitment

Percentage of national budget allocated to nutrition.

Nutrition targets can be included in multiple SDGs. It is imperative that nutrition targets and indicators be included in SDG2. Simultaneously, they can also feature in other SDGs, reflecting the symbiosis between nutrition and other sustainable development goals. Particularly important is SDG3 for ensuring healthy lives and wellbeing.

Indicators for nutrition-sensitive interventions and an enabling environment for improved nutrition need to be further defined. Important ones related to SDG1, 4 and 6 include:

- Proportion of women who are reached through social protection measures (that have clear nutrition objectives and actions to monitor).
- Proportion of adolescent girls completing secondary level education
- Proportion of population using a safely managed drinking service
- Proportion of population using a safely managed sanitation service

The following research and methodological gaps should be narrowed:

- Relevant key indicators for food safety need to be identified.
- Understanding of nutrition practices and outcomes in aging populations
- Understanding of appropriate nutrition targets and indicators applicable to people in emergency situations
- Diet quality and diversity merit more comprehensive and standardized measurement, as core intermediaries to achieving WHA nutrition targets in light of the multiple burdens of malnutrition and their complex relations with evolving global food systems. This applies to foods accessed by households and individuals (availability, affordability, choices), but also to what is available in terms of unprocessed and processed foods and their nutritional value. More thoughts need to be given to potential :
 - Food production diversity indices
 - Measures on the contribution of processed/packaged foods to dietary diversity.
- Validation of the MDD-W for adolescent girls
- Research on a metric for dietary diversity for children 24-29 months
- Operational research on the prevention of increase in overweight in children under five, or more ambitiously it could be reverse the trend of increase. A reversal requires scaled-up application of evidence-based actions that demonstrate an ability to measurably reduce child overweight. To date, there are few documented successful actions in this domain, making it a priority for the coming decade.

- Tracking coverage of nutrition interventions that make progress toward national commitments and global targets requires governments to strengthen routine surveillance.
- Since many countries rely on DHS and MICS for this information, it is timely that governments expand these surveys and allocate specific national resources to their implementation.
- In addition to strengthening national surveillance systems, coverage data on nutrition actions needs to be better systematized. A composite coverage index, in line with the Countdown 2015 Report, is one option. The WHO's GINA database could serve as a repository for coverage data.
- More context specific learnings are needed related to development as well as understanding of nutrition in humanitarian crises and post crisis transition: In addition to formative and operational research, strategies for narrowing this knowledge gap should include south-south information exchange, as initiated by SUN countries.

III) ACCOUNTABILITY FOR THE MEASUREMENT OF RESULTS IN NUTRITION

3.1. Measurement and information systems

Many of the challenges in monitoring nutrition indicators during the MDG era boiled down to shortcomings in nutrition data collection systems. What was and is still needed are innovative systems and tools that gather better data more frequently, more systematically and that enable disaggregation by parameters that facilitate identification of vulnerable groups [17]. The discussion below provides some background on current data sources for nutrition indicators, as well as ideas for ensuring that national data collection and information systems can accurately measure progress in nutrition by providing high quality, timely and disaggregated data.

Data collection systems for nutrition measurement

Currently, three main data collection methods for nutrition are used:

1. Periodically administered, population-based, nationally representative health and nutrition surveys such as MICS (Multiple Indicator Cluster Surveys, implemented in collaboration with UNICEF) and DHS (Demographic and Health Surveys, implemented in collaboration with US-AID). These surveys are the basis for measuring many key child growth, maternal and child nutrition and health indicators. (Living Standards Measurement Study Surveys, administered by the World Bank, are household surveys which collect information on food expenditure and which, in some iterations, also have the potential to provide information on individual level diet diversity.)

2. Dedicated, country-owned nutrition surveys are a common source of data on child growth, breastfeeding practices, anaemia and other micronutrient deficiencies, individual dietary diversity and quality, and food consumption. In principle, these surveys are in line with MICS and DHS. In practice, however, these surveys lack the internationally standardized tools, and external technical assistance that DHS and MICS benefit from. Consequently, they are often less standardized and do not produce the same quality of data and analysis. However, if alternating in time with DHS and/or MICS, and if using the same indicators, sampling methods and questionnaire modules, national nutrition surveys can usefully complement those more general surveys to refine time trend estimates for stunting, wasting and other key nutrition outcome indicators.

3. Routine public health nutrition surveillance, if of adequate coverage, completeness and reliability, can generate important data on the burden of acute malnutrition (wasting) and its management; on coverage and outcomes of facility-based and community-based monitoring of child growth; and on the coverage of nutrition interventions such as iron and folic acid supplementation for pregnant women, and breastfeeding promotion.

Being collected continuously over time (with quarterly or monthly reports), and across a large number or all facilities, routine surveillance has the greatest power of all data collection systems to immediately and practically inform programme adaptation at the sub-national level.

However, in a recent study, only 31 developing countries were identified that had any system of national nutrition surveillance [43]. This might be an underestimate though, as many countries do keep some records about treatment of acute malnutrition within their broader health information system. In addition, other countries have established extensive systems (mainly in Latin America and the Caribbean), that collect and use their surveillance data [44]. Sometimes nutrition surveillance is established during emergencies and humanitarian situations, but not sustained as a permanent structure to track progress over time. Some countries implement sentinel surveillance in selected, small-scale sites; this can be an interim solution during a longer-term transition to functioning national nutrition surveillance.

Strengthening routine nutrition program surveillance is critical for monitoring needs and coverage of nutrition-related interventions. In addition, over the long-term, broader health and information system

strengthening will need to continue in order to improve surveillance of other nutrition-related targets such as the reduction of low-birth weight [45]. (For more details on these three nutrition data collection methods, see Annex 2.)

Data sources of the proposed SDG priority target indicators

Out of the six WHA targets, four are regularly measured in most countries through DHS and MICs: *stunting, wasting, overweight in children under 5 years*, as well as *exclusive breastfeeding* for infants 0-5 months (see also Annex 3).

Anaemia in women of reproductive age is tracked at country-level by country-owned nutrition surveys of micronutrient deficiencies, but the data are variable with regard to quality and source, necessitating complex modelling and resulting in estimates that are not always robust at country and regional level. Since a simple and non-invasive device to determine blood haemoglobin levels under field conditions is available, it should be possible to roll-out more standardized anaemia measurement through existing country-owned national nutrition surveys, or through DHS/MICs.

Low Birth Weight tracking is often hampered by incomplete and poor quality birth weight recording in many countries [46]. Improving measurement of this indicator depends on ongoing, structural long-term enhancements in health information and civil registration systems.

Minimum Dietary Diversity

• *Minimum dietary diversity for women* could also be measured through household surveys. However the type of household survey that could best accommodate (e.g. DHS, LSMS, or the annual Gallup World Poll) remains to be determined. Questions to be addressed for operationalizing this indicator include: (i) whether data should be collected through an open and unstructured recall of foods consumed with grouping and coding done afterwards, or rather through pre-structured lists of food groups; (ii) whether food group lists should be universal or adapted to local contexts; and (iii) whether or not to consider minimum portion size in calculating food group consumption. These need to be explored by the relevant national and international M&E stakeholders.

Overall government spending on nutrition is currently being addressed by countries participating in the SUN Movement. In the follow-up to a 2013 November Workshop on Costing and Financial Tracking, agreement on a commonly-used methodology for tracking government resources was reached. National government budgets were identified as an entry point for tracking nutrition expenditures across a range of ministries and sectors (SUN Movement, meeting summary 16 July 2014).

In sum:

- Four of the WHA targets are regularly tracked by many countries through DHS in 3-5 year intervals.
- Tools exist to roll-out standardized anaemia measurement via biomarker (as opposed to less accurate, highly variable food recall) through DHS or country-owned nutrition surveys.
- Tracking of low birth weight data in countries with weak health information and civil registration systems is a challenge; improving measurement of this indicator depends on ongoing, structural long-term enhancements in health information and civil registration systems.
- Measures of diet quality and diversity for women can be incorporated in DHS and other tobe-determined data collection systems.
- A methodology for assessing government spending on nutrition is being developed by SUN.

Finally, it is important to emphasise the crucial role played by nationally owned nutrition surveys and nationally owned public health surveillance systems. These data collection systems are imperative for assessing prevalence of obesity and overweight measured by body mass index (BMI), on micronutrient deficiencies, on child growth monitoring and coverage of antenatal care, and on infant

and young child feeding (IYCF) counselling and practice. As such these systems are critical to the global nutrition architecture. Strengthening their design and implementation is essential to increase the nutrition sensitivity of the SDGs framework.

3.2. Accountability for Results

Accountability begins with national sovereignty and the responsibility of national leaders to the people they serve. Mutual accountability – i.e. holding stakeholders collectively responsible to joint commitments - is one of the principles of the SUN Movement. Stakeholders include governments, communities, and civil society with strong links between country level and global mechanisms. Data and information are the raw material for accountability.

Accountability in nutrition is especially difficult due to its multisectoral nature, the long-term effects of nutrition on human development, and the invisibility of some of its consequences. These variables create challenges to governments, donors, and other stakeholders worldwide [6].

As discussed below, meeting these challenges requires a clear understanding of current data collection systems' shortcomings combined with i) an understanding of what is required to improve them, ii) proactive investment in those improvements, and iii) stepped-up, systematic monitoring of those investments to increase accountability at country and global level.

Shortcomings in current data collection systems

Although there have been steady improvements in the availability and quality of nutrition data, there is still work to be done to create a clearer and more up-to-date picture of the world nutrition situation for use in planning, monitoring and evaluation of SDG-oriented policies and programmes.

Too many countries still have poor quality data and/or data that arrive too late. In addition, information on crucial nutrition issues may be non-existant or inadequately captured. Data on low birth weight, for example, are often inaccurate and sparse, or simply not collected at all. Up-to-date data on anaemia and other micronutrient deficiencies is also scarce, as is information on the coverage of programme interventions.

Further, too much data are still collected on the same subject but using different standards and technologies. This is true for micronutrient surveys which use different assessment techniques to estimate prevalence of deficiencies, household surveys that use slightly different questionnaires to estimate household food consumption, and geospatial surveys that uses different geographic definitions.

Finally, the interval between assessments is often too long. For example national household surveys provide standardized indicator data with relevant disaggregation, but they are conducted only at 3-5 year intervals. As the cost of more frequent national surveys is often prohibitive, sub-national data collection is used instead; however these surveys may be inadequate with respect to providing a complete picture of the nutrition situation in a given country.

Better information for better results in nutrition

To be useful, data must be of high quality and accessible in a timely fashion to those who need them for decision making. Comparability and standardization are crucial, as they allow data from different sources or time periods to be combined for regional and global figures, as well as to be used in time trend analyses. Data which can be disaggregated by age, gender, income and other relevant parameters are also crucial, as disaggregation allows policy makers to track variations in prevalence rates at sub-national levels. Existing inequalities of vulnerable groups will not be overcome without attentive action to measure, monitor and report on the existence and progressive elimination of these inequalities.

In an effort to meet these requirements, SUN countries have developed country-specific *Common Results Frameworks* (CRFs) which set national targets that have been agreed upon across sectors and ministries. CRFs ideally have the following features:

- Expected result for improvement of nutritional status;
- Defined populations in which these improvements will be seen;
- Interventions necessary to achieve the results and clear indications on the current coverage level and on the goal coverage;
- Identified responsibilities of line ministries and sectors within government for implementing the interventions;
- The roles and responsibilities of non-government partners;
- A shared framework for performance monitoring and evaluation; and
- A matrix of costs which identifies the contribution of government (including human resources) and of other implementers [47].

CRFs are a way to align and strengthen engagement of relevant sectors in monitoring their contributions to and achievements on time-bound national nutrition commitments and targets [48]. For CRFS to be fully realized, countries need well-functioning information systems that combine data from health facilities, administrative sources, surveys and other sector specific sources. However, in addition to the shortcomings described above, in many countries, technical and legal barriers may limit "business as usual's" effective collection and use of data across sectors.

That said, the integration of various information and communication technologies in national information systems and relevant infrastructures offers new possibilities. Increased calls for a "data revolution" to improve the scope of data and information available to citizens and policymakers through the use of innovative technological approaches [12, 13, 48-50] has also raised awareness of the need to better integrate data collected from the various sectors held accountable by country CRFs.

A data revolution also creates important opportunities for capturing information in emergency contexts and in countries dealing with recurring humanitarian crises. Social media, mobile phone records, and related innovations add to the momentum. While not nutrition-specific, these technologies offer additional possibilities to capture relevant details in real-time. For example, in Somalia mobile technology is used among others to inform the early warning system.

Investments for nutrition monitoring and accountability

Supporting multi-sectoral collaboration and technical innovation in nutrition data collection requires investment in capacity building. While not specific to nutrition, capacity building is explicitly addressed in SDG17 on "Strengthen the means of implementation" and especially in target 17.18: 'by 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing states, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in the national context."

Increased domestic resources and international support is needed to advance and implement innovative information systems in LMICs. However little information is available on the needs and costs of information systems. These presumably vary from country to country and depend on a range of factors, including the status of existing data collection and information systems, and survey implementation capacity and costs. A recent review of national surveillance systems in countries in Africa and Asia did not address the costs of the surveillance systems analysed [43].

With regards to nutrition, one immediate investment priority is enabling the DHS to collect data on dietary diversity, BMI, and biomarker-based micronutrient status. This would require formal addition of these tasks to the DHS protocol, with concomitant additional funding provided.

Better cost estimates and tracking of investments for nutrition monitoring

Accountability includes the transparent and credible tracking of financial resources and expenditures. As such, a growing number of SUN countries are creating costed national nutrition plans and using them to advocate for designated national budget lines for nutrition. As of 2014, 28 (out of 54) SUN countries had made their national nutrition budget plans publicly accessible, 21 of these national budget plans could be broken down to identify specific programmatic allocations to nutrition. [6,12].

Although information on actual expenditure is scarce, a 2014 review of SUN country costed nutrition plans (N = 23) does provide information on national investments in "services" and "nutrition governance". With respect to governance, 19 countries provided information on nutrition "information management", with sub-categories for "monitoring and evaluation", "surveillance", and "research" (see Box 1).

On average, an estimated 1.2% of total costs were for nutrition information management. However there was a wide range of costs across plans (see Figure 1). Moreover it should be noted that actual resource allocation could be higher as countries may have integrated some M&E-related cost elements into other budget lines such as 'system capacity building', 'nutrition-specific' or 'nutrition-sensitive responses', if the activity – often defined with a broad scope – was not solely related to M&E. The 2010 Scaling Up Nutrition estimates revealed an allocation of US Dollar 0.1 billion out of total costs of US Dollar 5.5 billion for rigorous M&E of a minimal package of 13 proven nutrition interventions which is around 1.8% of total costs (information from SUN Movement Secretariat).

Box 1: Cost estimates for national M&E and information systems, in national nutrition plans in 23 SUN countries

Countries, participating in the SUN Movement, costed their national nutrition plans. The network *Maximizing the Quality of Scaling Up Nutrition (MQ-SUN)* supported an analysis of the costing component in 23 countries, in 2013 and 2014 [47,49]. Most nutrition plans covered a timeframe of 4 or 5 years, within the period 2010 to 2017. The plans revolved primarily among the sector(s) that led the costing process, most often the health or agriculture sector. Eighteen of the 23 plans included a monitoring framework; and only eight of these included the data needed for measuring progress toward national nutrition targets/goals and for assessing the scale-up of nutrition actions from year to year. Furthermore, fewer than half of the M&E frameworks matched specific activities to measurable outcomes.

Regarding the average cost estimates for services: an average of US\$ 188 million (14%) was allocated to nutrition-specific services; US\$ 1,082 million (81%) for nutrition-sensitive services (mostly food security, followed by health, water and sanitation, and a small portion for child care), and US\$ 70 million (5%) for nutrition governance.

Within nutrition governance, 19 countries had included information management (with an annual average budget of US\$ 5.1 million). Out of these, 17 countries had costed as a sub-component '*Monitoring and Evaluation*' (with an annual average of US\$ 0.75 million), 14 countries had costed '*Surveillance*' (with an annual average of US\$ 1.0 million) and 14 countries had costed *Research* (with an annual average of US\$ 1.5 million). Furthermore, 18 countries included in their plan '*System Capacity Building*' (with an annual average of US\$ 10.4 million); and 19 countries had included costed '*Policy development, Advocacy and Communication*' (with an annual of average US\$ 1.3 million).

Four countries only had mapped available resources and estimated their funding gap, which over 5 years ranged from US\$ 5 million in Bangladesh to US\$ 81 million in Sierra Leone.

It has to be noted that, the current national nutrition plans and their costing did not encompass the complete list of national nutrition-specific, nutrition-sensitive and governance activities of relevant sectors and (notably non-government) stakeholders.

Learning from these costed nutrition plans in 23 countries (the first-ever in most countries), the costing of national nutrition plans is most valuable if it:

- Is based on clear national, annual performance targets for nutrition for well-defined population groups targeted by specific interventions, that were agreed and articulated in a national Common Results Framework, and are measured against agreed baseline values;
- Aligns with international standards which remain to be developed characterising which activities should be classified as nutrition-sensitive, and how to estimate proportion of activity costs that could be designated as nutrition-related,
- Aligns with general costing conventions as used in National Health Accounts, the One Health Tool developed by the UN Inter Agency Working Group on Costing, and the Organisation for Economic Co-operation and Development's Development Assistance Committee Creditor Reporting System [50];
- Includes performance targets, associated costs and commitments for stakeholders across sectors, and feeds into national and sub-national budgetary processes.



Links between national and global mechanisms

As of 2014, a number of international initiatives and donors support innovative approaches for strengthening national nutrition information and monitoring systems:

- The European Commission and UK Department for International Development (DfID) are supporting the development of innovative approaches to *National Information Platforms for Nutrition* (NIPN) in 6 African countries [51].
- In 2013, the WHO initiated the 'Accelerating Nutrition Improvements' (ANI) project in 2013, working with governments in 11 African countries to strengthen national nutrition surveillance processes by linking them to existing health information systems. The project's goal is to ensure that 25% of districts in participating countries will have functioning nutrition data collection systems that feed into national health information systems by 20XX. In 4 ANI countries, WHO is supporting collection of baseline data for scaling-up nutrition interventions through dedicated, country owned national nutrition surveys [52].
- USAID and the European Commission are co-funding the *Coverage Monitoring Network*, a multi-partner initiative to assess coverage of community based management of acute malnutrition (CMAM) programmes. Recent development of tools for monitoring programme coverage practically and easily have facilitated this initiative's activities. [53].
- For better oversight of results and resources, nationally and globally, WHO, UNICEF and World Bank launched a joint global database on child nutrition in September 2011 [54]. A vanguard in harmonized inter-agency global databases, this resource currently provides data on child stunting, wasting, and overweight. As mentioned above, these indicators are WHA global nutrition targets and are also recommended as priority post-2015 indicators.

Strategies and Actions for national and international actors

In sum, the current strategies and actions are recommended to improve measurement and accountability processes at *country-level*:

- A national Common Results Framework, aligning and focusing stakeholders across nutritionrelevant sectors, based on multi-year country needs assessment and including i) national goals for nutrition (WHA targets at a minimum), and ii) implementation targets and estimated costs for reaching these targets, including monitoring and evaluation and operations research.
- Adequate staffing and capacity strengthening in monitoring and evaluation at central and subnational levels, through education, training and supportive supervision.
- Transparent, accessible and inter-operable tools, systems and processes for electronic data management, quality control, communication and data usage by state and non-state actors, integrating where possible with existing national information systems for health, agriculture and other sectors. [17,55];
- A cross-sectoral multi-stakeholder coordination mechanism for joint annual progress reviews and action-oriented decision making with all stakeholders [6,56].
- Strong support from donors and other stakeholders for strengthening country owned, country driven processes and systems. This includes rationalizing donor and development partner reporting requirement to match core indicators and priorities of national nutrition plans and CRFs.

3.3 Key Messages on accountability for measurement of results

Nutrition progress must be better measured. Currently, many nations with high burdens of malnutrition do not collect adequate or enough data on nutrition. The quality and coverage of disaggregated data must be significantly improved to support policy and programming decisions; the monitoring of intervention coverage rates of key nutrition-specific programmatic actions should be scaled up; and parameters for what qualifies as nutrition-sensitive action need to be further defined:

- *Better information depends on high-functioning national nutrition data collection systems* that include findings from health facilities, administrative sources, surveys and other sector specific sources. Possibilities offered by modern information and communication technologies should be further explored.
- *A nutrition data revolution* based on strengthened capacities in high-quality data collection, analysis and communication, should underpin more effective use of M&E for national and global progress measurement, as well as programmatic decision making at sub-national levels. For optimal efficiency, coherence and usability of data, nutrition monitoring should build on and align with existing national information systems (e.g. for health and agricultural development) where possible.

Nutrition accountability and governance must be strengthened. Multiple stakeholders must be included in and acknowledged by the SDG nutrition agenda, however designation of responsibility for actions and results must be explicit, transparent and address conflict of interests. Leadership in this sphere should be promoted and rewarded. Governments should allocate more resources to monitoring their own commitments, and innovative accountability mechanisms should be tested and adopted:

• Investments in nutrition monitoring and accountability. Both domestic resources and international support is needed to build capacity. This is articulated in SDG17 on 'Strengthen the means of implementation' and especially in target 17.18: 'by 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing states, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in the national context.'

- *Better cost estimates and tracking of investments for nutrition* require comprehensive and costed national nutrition plans that include monitoring and reporting. Government accountability for improving nutrition is indelibly linked to these comprehensive costed action plans and subsequent improved financial tracking of nutrition-specific and nutrition-sensitive investments and their results across sectors. To this end, common results frameworks that align stakeholders across nutrition-relevant sectors should include a costed national monitoring plan than can measure and account for results for nutrition.
- Urgent, well-funded and government owned national platforms that bring together nutritionrelated information from key sources are essential to monitor progress in nutrition. Achieving improved nutrition means putting nutrition sustainability at the core of the human development agenda.

ANNEXES

ANNEX 1

Rational for the WHA targets in the SDGs

Stunting in children under five years of age

Stunting and wasting reduction as included in the SDG2 target 2.2 should be maintained. Childhood stunting remains one of the world's most fundamental challenges for improved human development and it is a risk factor for overweight and obesity later in life. The majority of stunted children (56%) live in Asia and over one third (36%) live in Africa. Specifically, stunting before age two predicts sub-par cognitive and physical outcomes in later childhood and adolescence and has important education and economic consequences at the individual, household and community levels as well as at country level. The economic cost of undernutrition have been estimated at 2-3% of global GDP (World Bank 2006), and can go much higher for individual countries (African Union et al, Cost of Hunger Report in Africa, 2014). It has been estimated that stunted children earn 20% less as adults compared to non-stunted individuals. In World Bank estimates, a 1% loss in adult height due to childhood stunting is associated with a 1.4% loss in economic productivity [57-59] [60].

Wasting in children under five years of age

Addressing wasting is of critical importance because of the increased risk of disease and death for children who are severely underweight. It will be difficult to continue improving rates of child survival without improvements in the proportion of wasted children receiving timely and appropriate lifesaving treatment, alongside reductions in the number of children becoming wasted in the first place. The majority of wasted children (69-71%) live in Asia and just over one quarter (28%) live in Africa.

Countries need to examine wasting inequalities between populations and identify for priority action particular vulnerable or marginalized groups where large numbers of wasted children cluster. Such an equity-inspired approach is both an ethical imperative and a judicious investment strategy. It is estimated that globally less than 15% of wasted children are currently being reached by treatment services and in some countries this percentage is considerably lower. These statistics are of serious global concern given the well-established link between wasting and mortality. Wasting and stunting, in particular, share common direct and underlying causal factors and preventative services tackling these causes are therefore likely to impact both conditions.

Childhood overweight

SDG target 2.2 refers to all forms of malnutrition, including overweight and obesity. Prevalence of child overweight is increasing in all regions of the world. In some countries, the epidemic of overweight and obesity exist alongside continuing problem of undernutrition and micronutrient deficiencies. In 2012, the prevalence of overweight in children under 5 years of age was highest in Southern Africa (18%) and Central Asia (12%). Childhood overweight and obesity increase the risk of diet related non-communicable diseases (NCDs), premature death and disability in adulthood. The primary drivers of childhood overweight and obesity are high levels of consumption of foods of minimal nutritional value and low physical activity. Government policies in agriculture and food systems need to address the availability, accessibility and acceptability of healthy food. The ICN2 has addressed this in particular.

There has been an increasing recognition among the global public health community as well as national governments in many parts of the world of the need to develop effective strategies for preventing and controlling childhood overweight and obesity [61]. This led the World Health Assembly to set a target in 2012, aiming to achieve no increase in childhood overweight by 2025. The World Health Assembly also established a target of no increase in adolescent and adult obesity by

2025. Furthermore, to accelerate WHO's efforts in addressing the crisis of childhood overweight and obesity, WHO's Director-General has also established a high-level Commission on Ending Childhood Obesity (ECHO) in May 2014. Given the dimension of the problem and its economic implications affecting all parts of the world, this WHA target needs to be incorporated in the SDGs framework.

Anaemia in women of reproductive age

The language in SDG target 2.2 suggests that there is space for more targets, especially with respect to addressing the nutritional needs of adolescent girls and women. Anaemia in women reduces physical performance and work capacity, and thus has negative impacts on national economic growth and development. Anaemia affects half a billion women of reproductive age worldwide. In 2011, 29% (496 million) of non-pregnant women and 38% (32.4 million) of pregnant women 15-49 years of age were anaemic. The prevalence is highest in south Asia and central and west Africa confirming the inequitable distribution of this condition. While the causes of anaemia are variable, it is estimated that half the cases of anaemia are due to iron deficiency. Failure to reduce anaemia consigns millions of women to impaired health and quality of life, generations of children to impaired development and learning, and communities and nations to impaired economic productivity and development. Maternal anaemia is associated with mortality and morbidity in the mother and infant, including risk of miscarriages, stillbirths, prematurity and low birth weight.

Exclusive breastfeeding

Achieving the above mentioned targets is noticeably linked to optimal infant and young child feeding including breastfeeding. Breast milk provides all the energy and nutrients that infants need during the first six months of life. Exclusive breastfeeding during the first six months protects against common childhood illnesses, such as diarrhoea and pneumonia, and it contributes to quicker recovery from illness. Breastfeeding promotes long-term health for both mother and child, including the child's sensory and cognitive development. In addition, it reduces the risk of childhood obesity and non-communicable diseases in later life. Increasing rates of exclusive breastfeeding will thereby contribute toward achievement of the other WHA global nutrition targets and is critical to include in the SDGs framework [62].

Low Birth Weight

The low birth weight (LBW) rate, the number of newborns with a birth weight <2500g, is the most commonly used indicator of fetal growth. LBW rates permit comparisons across populations, proposal of action and definition of targets for improvement of fetal growth. It remains a challenge in most parts of the world to measure fetal and newborn body size and gestational age at birth accurately as this needs close monitoring of pregnancy and birth events by a health care system that is able to incorporate appropriate technology with the human resources to support it. Thus, clinicians and researchers traditionally have relied on simpler indicators of newborn size as a proxy for fetal growth, without considering gestational age such as the low birth weight (LBW) rate [63].

Overall, it is estimated that 15 to 20% of all births worldwide are low birth weight, representing more than 20 million births a year. Although there is considerable variation in the prevalence of low birth weight across regions, the great majority of low birth weight births occur in developing countries [64,65].

Low birth weight, due to intrauterine growth restriction or prematurity, contributes to prenatal and neonatal mortality and morbidity, stunting, impaired cognitive development, and chronic diseases in later life. Low-birth-weight infants are approximately 20 times more likely to die than normal weight infants. At population level, the proportion of infants with a low birth weight is an indicator of a multi-faceted public health problem that includes long-term maternal malnutrition, ill health, hard work and poor health care in pregnancy.

ANNEX 2

Data collection systems for nutrition measurement

Population-based household surveys

Demographic and Health Surveys (DHS)[66], Multiple Indicator Cluster Surveys (MICS)[67], Living Standard Measurement Surveys and other nationally representative demographic and health surveys measure child anthropometry, child health (e.g. diarrhoea episodes as reported by the mother), birth history, infant and young children feeding practices, and in some surveys anaemia in women and/or children.

Strengths are that these household surveys measure validated indicators using standardized questionnaires and procedures, producing high quality, accurate data, from large probability-based samples which are comparable over time and across countries where they are periodically conducted. Survey results are nationally representative, but with disaggregation by age, gender, geography (by province-level), income and socio-economic groups, livelihood, education etc. allowing assessment of (in-) equities and identification of population groups for intervention targeting.

Disadvantages include the periodic nature, which makes these surveys less suitable to inform realtime program implementation and decision-making. Interpolation of time trends from 3- to 5-yearly surveys into annual outcomes requires sophisticated modelling and estimation (such as done by WHO, UNICEF and the Institute for Health Metrics & Evaluation). These surveys are conducted regularly in many low- and middle-income countries, but not generally in high-income countries, which paradoxically therefore sometimes have less, or less standardized data on key ((health and nutrition)) indicators. The strong international support and drive behind these surveys (from USAID for DHS, and from UNICEF for MICS), with limited scope for tailoring to local interests and needs, has tended to lower country ownership. Finally, outcomes for indicators with seasonal variation, such as food availability, diet intake, prevalence of wasting and diarrhoea, will be influenced by the season in which the survey is conducted (in DHS mostly, but not always, the dry season), which may confound assessment of time trends between subsequent surveys.

DHS and MICS may offer opportunities for more systematic inclusion of for example anaemia assessment (in women and children), or possibly for a women's diet module to complement the useful module on infant and young child feeding, rolled-out since 2010 based on the WHO's indicator and measurement guidelines [32]. Similarly, Living Standard Measurement Surveys may provide opportunity to expand indicators of dietary quality and nutrition outcomes. Other important surveys of this type include CDC series on reproductive health surveys (RHS), and WB living standard measurement surveys (LSMS).

Nutrition surveys

Dedicated nutrition surveys are a common source of data for prevalence child growth, breastfeeding, anaemia and other micronutrient deficiencies, individual dietary diversity and quality, and food consumption. In principle, these surveys share advantages and disadvantages with demographic and health surveys. In practice, however, micronutrient surveys typically are not as standardized and do not produce the same quality of data and analysis – lacking the internationally standardized tools and guidelines, as well as the external technical assistance that DHS and MICS benefit from.

If alternating in time with DHS and/or MICS, and if using the same indicators, sampling methods and questionnaire modules, national nutrition surveys can usefully complement those more general surveys to refine time trend estimates for stunting, wasting and other key nutrition outcome indicators. An example is the Standardized Monitoring & Assessment of Relief & Transitions (SMART) surveys

that measure food security and nutrition situation, including child anthropometry, during and after humanitarian crises [68].

Increasingly, nutrition household surveys are also being used to measure population coverage of large-scale staple food fortification and/or mother-child targeted micronutrient supplementation interventions during program scale-up [69,70]. These population-based coverage estimates, disaggregated by targeting criteria (such as rural & poor), are invaluable to complement and triangulate with programmatic data on production and distribution of fortified foods or supplements.

To improve measurement of micronutrient biomarkers, nutrition surveys could benefit from improved guidance on preferred measurement methods and devices (that preferably measure multiple micronutrients at once), from standardization of measurement and analysis methods, definitions and cut-offs, and from support by national and regional laboratories affiliated to external quality control programs [6].

Routine nutrition surveillance

Routine public health sector-led nutrition surveillance, if of adequate coverage, completeness and reliability, can generate important data on the burden of acute malnutrition (wasting) and its management; on coverage and outcomes of facility-based and community-based monitoring of child growth; and on the coverage of nutrition interventions such as iron and folic acid supplementation for pregnant women, and breastfeeding promotion.

Being collected continuously over time (with quarterly or monthly reports), and across a large number or all facilities, routine surveillance has the greatest power of all data collection systems to immediately and practically inform program adaptation at the sub-national level.

In a recent study, only 31 developing countries were identified that had any system of national nutrition surveillance – with varying approaches, scope, indicators and effective use for nutrition programming [43]. This might be an underestimate though as many countries do keep some records about treatment of acute malnutrition within their broader health information system, but these data are often incomplete and of uncertain quality. In addition, other countries established extensive systems, mainly in Latin America and the Caribbean, (so-called Sistema de Vigilancia Alimentaria y Nutricional [Food and Nutrition Monitoring System]), that collect and use their surveillance data [44]. Sometimes nutrition surveillance is established during emergencies and humanitarian situations, but not sustained as a permanent structure to track progress over time. Some countries implement sentinel surveillance in selected, small-scale sites; this can be an interim solution during a longer-term transition to functioning national nutrition surveillance.

Strengthening routine nutrition program surveillance is critical for monitoring needs and coverage of nutrition-related interventions. In addition, broader health and information system strengthening will need to continue, over longer terms, in order to improve surveillance of other nutrition-related targets such as the reduction of low-birth weight [45].

Indicator	Indicator definition*	Measurement system	Measurement & interpretation
(Reduce) Stunting in children under- 5 years and/or under-2 years ^{\$+}	Proportion of children with Height-for-Age < -2 standard deviations of the WHO child growth standards median.	DHS, MICS & other household surveys, used in UNICEF/WHO /WB trend estimates.	 Stunting in children <2 years (1000-day window of opportunity) is more sensitive and quickly responding to intervention impact than in children <5 years. Wasting fluctuates seasonally and with socio-economic events; survey-based prevalence measures do not pick up the full burden of incident cases. → Methods should be developed to estimate countries' long-term wasting trends.
(Reduce) Wasting in children under 5 years and/or under-2 years ^{\$+}	Proportion of children with Weight-for-Height < -2 standard deviations of the WHO child growth standards median.	DHS, MICS & other household surveys, used in UNICEF/WHO /WB trend estimates	 Quality of measurements depends on training and quality control; possibly less in DHS than in dedicated nutrition surveys [71]. Comparability of results depends on cut-offs and protocols applied to correct and clear outliers. 2014: 109 and 123 countries qualified as on/off track for country-specific WHA stunting and wasting targets, respectively [72].
(No increase) Overweight in children under 5 years ^{\$+}	Proportion of children with Weight-for-Height \geq -2 standard deviations of the WHO child growth standards median.	DHS, MICS and other surveys, as BMI-for-age Z- score, used in UNICEF/WHO /WB trend estimates	• 2014: 107 countries qualified as on/off track for country-specific WHA target [72].
(Reduce) Prevalence of anemia in women \$+	 Proportion of: Non-pregnant women, age 15-49 years: haemoglobin <12 g/dL. Pregnant women: haemoglobin <11 g/dL. 	Selected DHS & micronutrient surveys, used in WHO trend estimates Model data currently used in tracking tool	 Anemia has many causes (malaria, worm disease, etc.); so not always sensitive and responsive to nutrition interventions. Children under 2 years would have priority to monitor, as the group with most potential benefit from, and most sensitive response to nutrition interventions. Collected in some, not all DHS & countries; more often for children than for women. Varying measurements & definitions necessitate complicated modelling; resulting estimates may not be considered meaningful or credible at country-level. 2014: 185 countries – based on model estimates, not direct data qualified as on/off track for country-specific women's anemia WHA target [72].
(Increase) Prevalence of exclusive breastfeeding \$+	Proportion of infants aged 0- 5 months who are fed exclusively on breast milk.	DHS & MICS	 Mother self-reported, subject to recall bias WHO's definition of 'on track' for country-specific WHA target [72] adopted in May 2014. 2014: 112 countries; UN agencies harmonizing data.
(Decrease) Low Birth Weight ^{\$+}	Proportion of infants born with birth weight <2500 grams	Routine surveillance/ administration; DHS, MICS, joint project (UNICEF/WHO/Academia)	 Multi-causal, so less immediately sensitive and responsive to nutrition interventions. Most births in low & lower-middle income countries are not weighted, definitions are non-standard, mothers' recall is not reliable and suffers from age heaping, so data need time-varying model-based adjustments [6,46]. Long-term process to improve country data.

Annex 3: Measurement systems and current data tracking status for the proposed SDGs nutrition targets

Indicator	Indicator definition*	Measurement system	Measurement & interpretation
		currently looks into used of these in trend estimates	 Definition of 'on track' rule for country-specific WHA target is pending. UNICEF, Johns Hopkins University and London School of Hygiene and Tropical Medicine are reviewing data and adjustment methods, and may revise estimation methods resulting in a new time series [6].
(Increase) Prevalence of Minimum Dietary Diversity, for children 6-23 months ^{\$+}	The proportion of children who consumed, during the past 24 hours, at least the minimum dietary diversity, which for non-breastfed children includes ≥ 2 milk feedings.	DHS, some MICS & micronutrient surveys (27 countries, 2010-13), collated by WHO	While validated as indicator of individual-level adequacy of complementary feeding and micronutrient intake, not yet tested for cross-country comparison.
(Increase) Prevalence of Minimum Dietary Diversity for women	• Proportion of women 15- 49 years who consumed, during the last 24 hours, a minimum ≥5 out of 10 food groups [26].	Nutrition surveys – currently few.	 Requires qualitative 24-hour dietary recall, by specially trained data collectors. While validated as an indicator of individual-level diet and micronutrient quality, not yet tested for cross-country comparison.
(Reduce) Proportion of people under- nourished ⁺	(Relative shortage in) Dietary energy available from food, divided by populations' minimum energy requirement	National Food Balance sheets, collated by FAO	 National aggregates only. With 2-5-yearly collection, not sensitive to shocks & rapid changes. Despite FAO's 2012 revision of cut-offs and prevalence estimates, needs further validation, and/or complementing with alternative food security indicators [73]. 2012: 94 countries.

* Sources: page 106-10 of [74] & [75].
 ^{\$} Indicator included in the International Health Partnership / WHO global core indicator list [17]

⁺ Indicator included in the Global Nutrition Report's country profile of indicators selected on their relevance in improving nutrition outcomes [75].

Colour coding:

Green: Indicator routinely measured in most countries, and progress against WHA target tracked at country-level; Brown: Indicator with measurement and/or tracking issues to solve.

Annex 4: Coverage indicators of nutrition-specific interventions (based on Bhutta et al, Lancet 2013) for country level program monitoring

Indicator	Rationale and Global targets and	Measurement systems	Measurement and interpretation issues
Promoting early and exclusive breastfeeding	Nutrition for Growth Compact	Surveillance (currently N/A)	DHS and MICS measure prevalence of (resulting desired) practices: early breastfeeding initiation, exclusive breastfeeding and continued breastfeeding
Promoting improved complementary feeding		Surveillance (currently N/A)	
Vitamin A supplementation for c hildren 6-59 months, 2 x high-dose within the last year	 IHP+/WHO global CORE health indicator. 	DHS, MICS and routine surveillance, collated by UNICEF	2014: National coverage data for 62 countries
Therapeutic zinc for treatment of diarrhoea	 SDG3 IHP+/WHO global ADDITIONAL health indicator. 	DHS & other national surveys	Some countries have data, but few have nationally representative data.
Preventive zinc supplementation for children			No national programs yet
Management of moderate acute malnutrition (MAM)	 Nutrition for Growth Compact. IHP+/WHO global ADDITIONAL health indicator. 	Surveillance; coverage surveys	 MAM: No programs exist yet at scale. WFP will pilot MAM coverage definitions in some countries in 2015. SAM: Direct coverage estimates (based on observed admissions, and burden in clinics' catchment population) are preferred, but currently only available at sub-national levels, and of variable quality and comparability [6].
Management of severe acute malnutrition (SAM)	 Nutrition for Growth Compact. IHP+/WHO global ADDITIONAL health indicator. 	Surveillance; coverage surveys	
Households consuming adequately iodized salt	 SDG2 & 3 IHP+/WHO global ADDITIONAL health indicator. 	DHS, MICS & other national surveys	2014: National coverage data for 128 countries [76]
Iron-folate supplementation (minimum 90 days) for pregnant women	 IHP+/WHO global ADDITIONAL health indicator. 	DHS; since 2003 80 countries with data	 Requires standardization of definitions. Some complementary data on coverage with iron/folate-fortified staple foods from the <i>Flour Fortification Initiative</i>.
Multiple micronutrient supplementation for pregnant women		Surveillance (currently N/A)	No national programs yet

Indicator	Rationale; Corresponding SDG and Global targets and commitments	Measurement systems	Measurement and interpretation issues
Calcium supplementation for pregnant		Surveillance (currently	Few programs yet exist
women		N/A)	
Balanced energy + protein supplementation		Surveillance (currently	No validated indicator definition and data collection
for pregnant women		N/A)	method yet.

* Essential nutrition-specific interventions proven effective for improving maternal and/or child nutrition, based on [11]. For indicator definitions and global databases, see <u>http://www.unicef.org/publications/files/Nutrition_Report_final_lo_res_8_April.pdf</u> (page 106-10), [77][59][58] and [73].

Colour coding:

Green: Indicator routinely measured in most countries and tracked at country-level;

Brown: Indicator with measurement / tracking issues to solve to enable routine measurement and use for SDG accountability; Blue: Optional indicator, for which routine, reliable measurement in most countries not current and not foreseen in short term.

BMI	Body Mass Index
DHS	Demographic and Health Surveys (supported by USAID)
FAO	UN Food & Agriculture Organization
IHP+	International Health Partnership
LMICs	Low and middle-income countries
LSMS	Living Standard Measurement Study
MAM	Moderate Acute Malnutrition
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MICS	Multiple Indicator Cluster Surveys (supported by UNICEF).
MQ-SUN	Maximizing Quality in Scaling Up Nutrition
N/A	Not applicable
SDG	Post-2015 Sustainable Development Goal
SMART	Specific, measurable, achievable, relevant and time-bound
	(as indicator criteria)
SMART	Standardized Monitoring & Assessment of Relief & Transitions (as survey
	methodology)
Nutrition-specific	Addressing the immediate determinants of (mal-) nutrition
Nutrition-sensitive	Addressing the underlying causes of malnutrition
SAM	Severe Acute Malnutrition
UN	United Nations
UNICEF	United Nations' Children Fund
USAID	United States Agency for International Development
WHA	World Health Assembly
WHO	World Health Organization

Annex 5: List of Abbreviations

For indicator definitions, see Annexes 3 & 4.

Annex 6: References

- 1. Webb P October 2014. Nutrition and the post-2015 Sustainable Development Goals. Technical note. Geneva: United Nations Standing Committee on Nutrition,.
- 2. Millennium Assembly of the United Nations. 2000. Millennium Development Goals, Targets and Indicators. <u>http://www.unmillenniumproject.org/goals/gti.htm#goal1</u>.
- 3. Waage J, Banerji R, Campbell O, Chirwa E, Collender G, et al. (2010) The Millennium Development Goals: a cross-sectoral analysis and principles for goal setting after 2015 Lancet and London International Development Centre Commission. *Lancet* **376**: 9745, 991-1023.
- 4. Fanzo JC, Pronyk PM (2011) A review of global progress toward the Millennium Development Goal 1 Hunger Target. *Food Nutr Bull* **32**: 2, 144-158.
- 5. The World Bank 2013. Improving nutrition through multisectoral approaches. Washington DC. <u>http://www-</u>

wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/02/05/000356161 20130205130807/Rendered/PDF/751020WP0Impro00Box374299B00PUBLIC0.pdf.

- 6. International Food Policy Research Institute September 2014. Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition. Washington DC: International Food Policy Research Institute & World Health Organization Dept. of Nutrition for Health and Development.
- 7. SUN Movement September 2012. Scaling Up Nutrition (SUN) Movement Strategy [2012 -2015]. http://scalingupnutrition.org/
- 8. Food & Agriculture Organization, World Health Organization. Conference Outcome Document: Rome Declaration on Nutrition. ; 2014 19-21 November; Rome. <u>http://www.fao.org/about/meetings/icn2/en/</u>.
- 9. Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, et al. (2008) What works? Interventions for maternal and child undernutrition and survival. *Lancet* **371**: 9610, 417-440.
- 10. Horton S, Shekar M, McDonald C, Mahal A, Brooks JK. 2010. Scaling up nutrition: What will it cost? Washington D.C.: The World Bank.
- Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, et al. (2013) Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *Lancet* 382: 9890, 452-477.
- 12. SUN Movement September 2014. SUN Movement Annual Progress Report 2014. <u>http://scalingupnutrition.org/wp-content/uploads/2014/11/SUN_Progress-Report_ENG_20141024_web_pages03.pdf</u>.
- 13. Open Working Group of the General Assembly on Sustainable Development Goals 2014. Open Working Group proposal for Sustainable Development Goals.
- <u>http://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf</u>. 14. United Nations General Assembly. 2014. Resolution A/68/L.61 New York city.
- http://www.un.org/ga/search/view_doc.asp?symbol=A/68/L.61&Lang=E.
- 15. UN System Task Team on the post-2015 UN Development Agenda June 2012. Realizing the Future We Want for All -- Report to the Secretary-General. NYC. <u>http://www.beyond2015.org/sites/default/files/Realizing%20the%20future%20we%20want.</u> <u>pdf</u>.
- 16. UN System Task Team on the post-2015 UN Development Agenda July 2013. Statistics and indicators for the post-2015 development agenda -- Overview. New York City. <u>http://www.un.org/en/development/desa/policy/publications/Statistics%20and%20indicato</u> <u>rs_Overview.pdf</u>.
- 17. World Health Organization August 2014. Rationalization of indicators and reporting requirements for better results. Draft summary report, of the meeting of the Working group on Indicators and Reporting Burden & IHP+ Information & accountability working group. Geneva.

- 18. 65th World Health Assembly, World Health Organization. May 2012. Global targets to improve maternal, infant and yound child nutrition. <u>http://thousanddays.org/wpcontent/uploads/2012/05/WHO-Targets-Policy-Brief.pdf</u>.
- 19. World Health Organization. 11 May 2012. Comprehensive implementation plan on maternal, infant and young child nutrition Annex 2 to 65th World Health Assembly resolutions and documents related to nutrition. [A65/11 26 April 2012 and A65/11 Corr.1 11 May 2012] http://www.who.int/nutrition/topics/WHA65.6 annex2 en.pdf.
- 20. World Health Organization. 26th May 2013. Sixty-fifth World Health Assembly. Agenda item 13.3 Maternal, infant and yound child nutrition. WHA65.6. In: World Health Organization, editor. <u>http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_R6-en.pdf</u>.
- 21. Food & Agriculture Organization, World Health Organization. Round Table 1, Jeff Sachs' key note address; 2014 19-21 November; Rome. <u>http://www.fao.org/about/meetings/icn2/en/</u>.
- 22. Arimond M, Wiesmann D, Becquey E, Carriquiry A, Daniels MC, et al. (2010) Simple food group diversity indicators predict micronutrient adequacy of women's diets in 5 diverse, resource-poor settings. *J Nutr* **140**: 11, 2059S-2069S.
- 23. Moursi MM, Arimond M, Dewey KG, Treche S, Ruel MT, et al. (2008) Dietary diversity is a good predictor of the micronutrient density of the diet of 6- to 23-month-old children in Madagascar. *J Nutr* **138**: 12, 2448-2453.
- 24. Working Group on Infant and Young Child Feeding Indicators August 2010. Developing and Validating Simple Indicators of Dietary Quality and Energy Intake of Infants and Young Children in Developing Countries: Summary of findings from analysis of 10 data sets. . Washington DC: Food and Nutrition Technical Assistance (FANTA) Project & Academy for Educational Development (AED). <u>http://pdf.usaid.gov/pdf_docs/PNADJ224.pdf</u>.
- 25. Smith L, Haddad L. April 2014. Reducing Child Undernutrition: Past Drivers and Priorities for the Post-MDG Era. Institute of Development Studies -- Vulnerability, Hunger and Nutrition Research Cluster; Transform Nutrition. <u>www.ids.ac.uk/publication/reducing-child-</u> <u>undernutrition-past-drivers-and-priorities-for-the-post-mdg-era</u>.
- 26. FAO Fiat Panis, II F, European Union, USAID, FHI360. Introducing the Minimum Dietary Diversity Women (MDD-W) Global Dietary Diversity Indicator for Women; 2014 15-16 July; Washington DC.

http://www.fao.org/fileadmin/templates/nutrition_assessment/Dietary_Diversity/Minimum_ dietary_diversity_-_women_MDD-W_Sept_2014.pdf.

- 27. International Coalition on Advocacy for Nutrition January 2015. Recommendations on Priority indicators for post-2015.
- 28. World Health Organization. 2014. Global database on body mass index. <u>http://apps.who.int/bmi/index.jsp?introPage=intro_3.html</u>
- 29. Rao S, Yajnik CS, Kanade A, Fall CH, Margetts BM, et al. (2001) Intake of micronutrient-rich foods in rural Indian mothers is associated with the size of their babies at birth: Pune Maternal Nutrition Study. *J Nutr* **131**: 4, 1217-1224.
- 30. Heath H, Sturdy D. 2009. Nutrition and Older People. Harrow, Middlesex: United Kingdom Department of Health,.

http://rcnpublishing.com/userimages/ContentEditor/1373368440289/Nutrition-and-older-people.pdf.

- 31. World Health Organization. 2015. Nutrition for Older Persons. Geneva. <u>http://www.who.int/nutrition/topics/ageing/en/index1.html</u>.
- 32. World Health Organization, UNICEF, USAID, Academy for Educational Development (AED), Food and Nutrition Technical Assistance project (FANTA-2), et al. 2010. Indicators for assessing infant and young child feeding practices. Geneva. http://www.who.int/nutrition/publications/infantfeeding/9789241596664/en/ &

http://www.who.int/nutrition/publications/infantfeeding/9/89241596664/en/ & http://whqlibdoc.who.int/publications/2010/9789241599290_eng.pdf?ua=1.

- 33. World Health Organization (2012) WHO, Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide (page 26).
- 34. World Health Organization. December 2014 2014. World Health Statistics / Global Health Observatory. Geneva. <u>http://www.who.int/gho/publications/world_health_statistics/en/</u>.
- 35. World Food Programme Vulnerability Analysis and Mapping Branch (ODAV) 2008. Technical Guidance Sheet - Food Consumption Analysis: Calculation and Use of the Food Consumption Score in Food Security Analysis. Rome. <u>http://www.wfp.org/content/technical-guidance-sheet-food-consumption-analysis-calculation-and-use-food-consumption-score-food-s</u>.
- 36. United Nations Standing Committee on Nutrition 2014. Technical Note 4 to the Global Nutrition Report 2014. Towards Sustainable, Healthy and Profitable Food Systems: Nutrition and the Sustainable Management of Natural Resources. Geneva. http://globalnutritionreport.org/files/2014/11/gnr14 tn n4g 04unscn.pdf.
- 37. Food & Agriculture Organization, World Health Organization. 2014. ICN2 Preparatory Technical Meeting -- summary of sessions and outcome. Rome. http://www.fao.org/fileadmin/user_upload/agn/pdf/PTMSummaryReport2013_2_.pdf.
- Alderman H. Taking Safety Nets from Poverty Reduction to Nutrition Enhancement. A brief for the ICN2 Side Meeting - Transition from Safety Net Programs to Comprehensive Social Protection Systems: Food Security and Nutrition Perspective; 2014 November; Rome. International Food Policy Research Institute.
- 39. World Health Organization 30 September 2014. Indicators for the Global Monitoring Framework on Maternal, Infant and Young Child Nutrition. Draft background paper.
- 40. World Health Organization. 3 October 2014. Global Reference list of 100 core health indicators (version 4). Geneva.

http://www.ihsn.org/HOME/sites/default/files/resources/Global%20RefList%20Core%20Indi cators%20V4_30ct2014.pdf.

- 41. UK AID, Children's Investment Fund Foundation (CIFF), Governo Federal de Brasil. 2013. Global Nutrition for Growth compact. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/248760/E
 ndorserscompact_update7_10_2013.pdf.
- 42. World Health Organization. 2014. Global database on the Implementation of Nutrition Actions (GINA). Geneva. <u>http://www.who.int/nutrition/gina/en</u>.
- 43. Friedman G January 2014. Review of National Nutrition Surveillance Systems. Washington DC: Food and Nutrition Technical Assistance (FANTA III), FHI360 & USAID. <u>http://www.fantaproject.org/sites/default/files/resources/Nutrition-Surveillance-Feb2014.pdf</u>.
- 44. Ruiz V 2014. Sistema de Vigilancia Alimentaria y Nutricional [Food and Nutrition Monitoring System] (SISVAN). <u>http://www.slideshare.net/vianey346/sisvan</u>.
- 45. World Health Organization, Implementing the Commission on Information and Accountability Recommendations. 2014. Accountability for women's and children's health. 2014 progress report.

http://www.who.int/woman_child_accountability/about/COIA_report_2014.pdf?ua=1.

- 46. Blanc AK, Wardlaw T (2005) Monitoring low birth weight: an evaluation of international estimates and an updated estimation procedure. *Bull WHO* **83**: 3, 178-185.
- 47. Pittore K, Barker T. August 2014. Planning and costing to accelerate actions for scaling-up nutrition. HEART-Resources.

http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/4737/MQSUN_Briefing% 233_Synth_3%200.pdf?sequence=1.

48. Scaling Up Nutrition (SUN) Movement Secretariat 10 April 2013. Monitoring and Evaluation framework (final draft). <u>http://scalingupnutrition.org/wp-content/uploads/2013/05/SUN-ME-Framework.pdf</u>.

- 49. Scaling Up Nutrition May 2014. Planning and costing for the acceleration of actions for nutrition: experiences of countries in the Movement for Scaling Up Nutrition. Final synthesis report. <u>http://scalingupnutrition.org/wp-content/uploads/2014/05/Final-Synthesis-Report.pdf</u>.
- 50. Organisation for Economic Co-operation and Development. 5 June 2014 2014. Development Assistance Committee (DAC)'s Creditor Reporting System Paris. <u>http://stats.oecd.org/index.aspx?DataSetCode=CRS1</u>.
- 51. Scaling Up Nutrition Secretariat April 2014. Information systems for nutrition. http://scalingupnutrition.org/wp-content/uploads/2012/10/ Green_External_InPractice_second_ENG_20140806_web-spreads.pdf.
- 52. World Health Organization. 2014. Accelerating Nutrition Improvements in Sub-Saharan Africa (ANI) -- Strengthening nutrition surveillance and scaling up action in nutrition. http://www.who.int/nutrition/ANI_project/en/.
- 53. Action Against Hunger / ACF International, Concern Worldwide, Helen Keller International. 2012. Coverage Monitoring Network. <u>http://www.coverage-monitoring.org/</u>.
- 54. UNICEF, World Health Organization, The World Bank. 2014. 2011 Joint child malnutrition estimates Levels and trends. <u>http://www.who.int/nutgrowthdb/estimates2011/en/</u>.
- 55. UNICEF on behalf of the SUN UN Systems Network in collaboration with the SUN Movement Secretariat. Workshop on Monitoring Implementation and Demonstrating Results for Nutrition. Meeting report.; 2014 12-13 May; Nairobi.
- 56. Victora CG, Black RE, Boerma JT, Bryce J (2011) Measuring impact in the Millennium Development Goal era and beyond: a new approach to large-scale effectiveness evaluations. *Lancet* 377: 9759, 85-95.
- 57. Victora CG, Adair L, Fall C, Hallal PC, Martorell R, et al. (2008) Maternal and child undernutrition: consequences for adult health and human capital. *Lancet* **371**: 9609, 340-357.
- Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, et al. (2013) Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet* 382: 9890, 427-451.
- 59. Hoddinott J, Alderman H, Behrman JR, Haddad L, Horton S. 2013. The economic rationale for investing in stunting reduction. Washington DC: International Food Policy Research Institute.
- 60. World Health Organization October 2014. Global nutrition targets 2025. Stunting policy brief. Geneva. <u>http://www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf</u>.
- 61. World Health Organization October 2014. Global nutrition targets 2025. Childhood overweight policy brief. Geneva.

http://www.who.int/nutrition/globaltargets_overweight_policybrief.pdf.

- 62. World Health Organization October 2014. Global nutrition targets 2025. Global target 5: By 2025, increase the rate of exclusive breastfeeding in the first six months. Geneva. http://www.who.int/nutrition/globaltargets_breastfeeding_policybrief.pdf.
- 63. World Health Organization October 2014. Global nutrition targets 2025. Low birthweight policy brief. Geneva.

http://www.who.int/nutrition/topics/globaltargets_lowbirthweight_policybrief.pdf?ua=1.

- 64. Barros FC, Barros AJ, Villar J, Matijasevich A, Domingues MR, et al. (2011) How many low birthweight babies in low- and middle-income countries are preterm? *Rev Saude Publica* 45: 3, 607-616.
- 65. Lee AC, Katz J, Blencowe H, Cousens S, Kozuki N, et al. (2013) National and regional estimates of term and preterm babies born small for gestational age in 138 low-income and middle-income countries in 2010. *Lancet Glob Health* **1**: 1, e26-36.
- 66. ICF International, U.S. Agency for International Development (USAID). Demographic and Health Surveys (DHS). Calverton, MD, USA: USAID. <u>http://dhsprogram.com/</u>.
- 67. UNICEF. Multiple Indicator Cluster Surveys. <u>http://www.childinfo.org/mics.html</u>.
- 68. Villeneuve S, Ralte A. April 2006. Measuring Mortality, Nutritional Status, and Food Security in Crisis Situations: SMART METHODOLOGY. Standardized Monitoring & Assessment of Relief &

Transitions. UNICEF & USAID. <u>http://smartindicators.org/SMART_Methodology_08-07-</u>2006.pdf.

- 69. Aaron GJ, Jacobson M, Megazzini K, Manian N, Wulfe M, et al. National coverage of wheat flour and oil staples among women of reproductive age (WRA) and young children in Senegal. 2014 2-6 June; Addis Ababa.
- Aaron GJ, Siling K, Norris A, Guevarra E, Myatt M. Assessing coverage of targeted and large-scale fortification programs: development of a fortification assessment coverage tool (FACT). 2014
 2-6 June; Addis Ababa.
- 71. Corsi DJP, Subramanian SV. 2014. Report on the Quality of Anthropometric Data on Children's Height and Weight in 100 Health and Nutrition Surveys in the West Central Africa Region UNICEF West Central Africa Region.
- 72. World Health Organization. 2014. Country Indicator Status WHO. Geneva. <u>http://www.who.int/nutrition/country_statusv2.pdf</u>.
- 73. Food & Agriculture Organization I, World Food Program, March 2014. Post-2015 Development Agenda. Rome-based Agencies' Targets and Indicators, Rome. http://www.fao.org/ fileadmin/user_upload/post-2015/Targets_and_indicators_RBA_joint_proposal.pdf.
- 74. UNICEF April 2013. Improving child nutrition: the achievable imperative for global progress. New York. <u>http://www.unicef.org/publications/files/Nutrition_Report_final_lo_res_8_April.pdf</u>.
- 75. Haddad L, World Health Organization, et al. September 2014. Global Nutrition Report, Technical Note 1. Nutrition Country Profile Indicators: Definitions and Sources. Geneva: World Health Organization Dept. of Nutrition for Health and Development,.
- 76. Zimmermann MB, Andersson M (2012) Update on iodine status worldwide. *Curr Opin Endocrinol Diabetes Obes* **19**: 5, 382-387.
- 77. World Health Organization 22 October 2012. Indicators to monitor the implementation of the comprehensive implementation plan.

http://www.who.int/nutrition/EB128 18 backgroundpaper4 nutrition indicators.pdf.

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